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Report 147

HYDRO-ELECTRIC INQUIRY COMMISSION

REPORT  
ON  
EUGENIA SYSTEM


W. D. GREGORY, CHAIRMAN  
M. J. HANEY  
LLOYD HARRIS  
J. ALLAN ROSS  
R. A. ROSS  
COMMISSIONERS  
JOSEPH H. W. BOWER  
SECRETARY











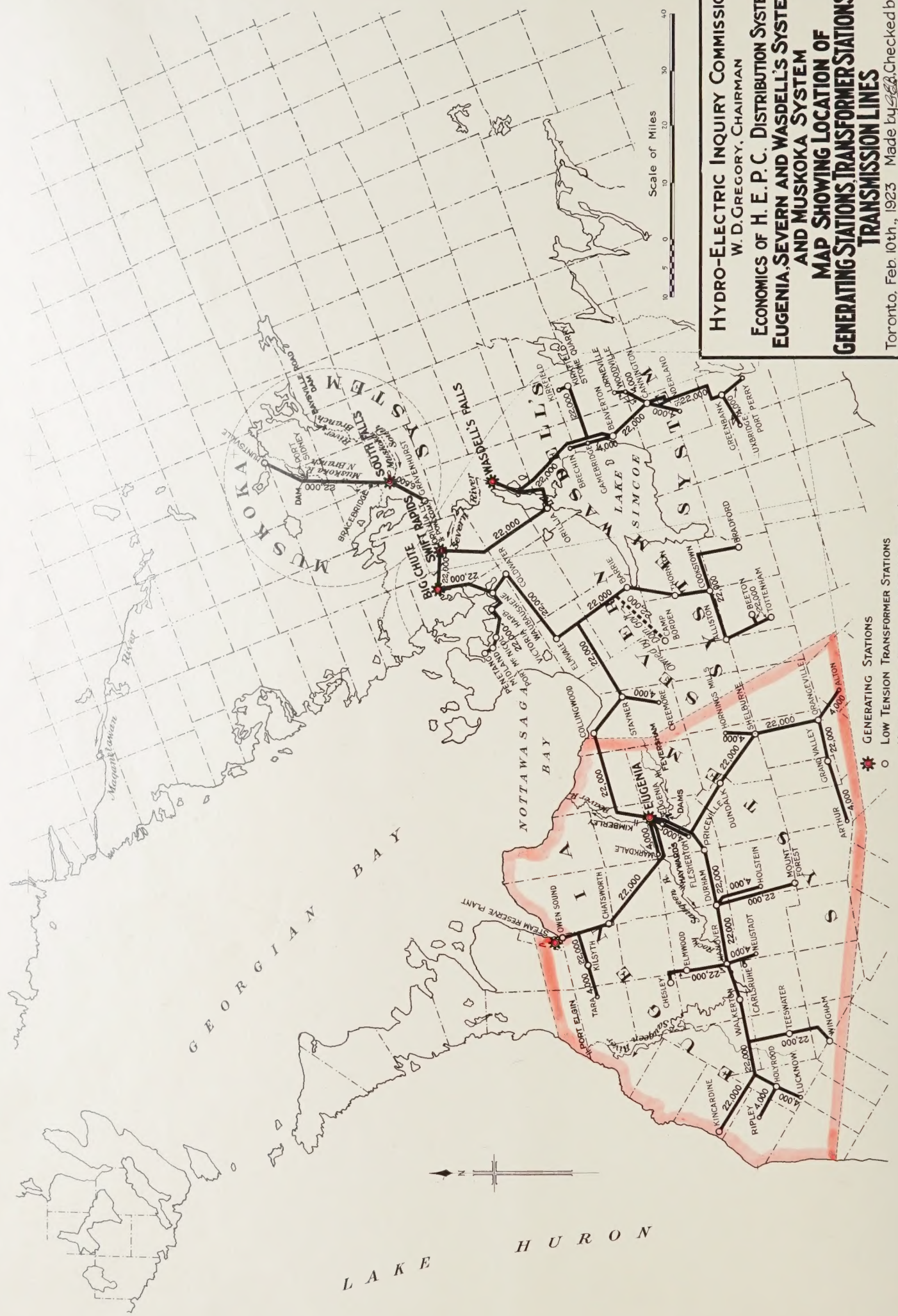
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**HYDRO-ELECTRIC INQUIRY COMMISSION**  
**W.D. GREGORY, CHAIRMAN**  
**ECONOMICS OF H. E. P. C. DISTRIBUTION SYSTEMS**  
**EUGENIA, SEVERN AND WASDELL'S SYSTEMS,**  
**AND MUSKOKA SYSTEM**  
**MAP SHOWING LOCATION OF**  
**GENERATING STATIONS, TRANSFORMER STATIONS AND**  
**TRANSMISSION LINES**

Toronto, Feb. 10th., 1923 Made by *W.D.G.* Checked by *W.D.G.*  
**WALTER J. FRANCIS & COMPANY**  
 CONSULTING ENGINEERS

\* GENERATING STATIONS  
 O LOW TENSION TRANSFORMER STATIONS  
 O MUNICIPALITIES SERVED BY H.E.P.C. WITHOUT LOCAL TRANSFORMER STATIONS.  
 NOTE:-  
 TRANSMISSION LINE VOLTAGE SHOWN THUS 22,000



To His Honour Henry Cockburn,

Lieutenant-Governor of the Province of Ontario.

May 13 1890 Dear Honourable Sir,

In pursuance of the directions contained in your  
letter of the 10th inst. I have the honour to  
acknowledge the receipt of your letter of the 10th inst.  
and to inform you that the same has been forwarded to  
the Hydro-Electric Commission for their consideration.  
The Commission have the honour to acknowledge the receipt  
of your letter of the 10th inst. and to inform you that  
the same has been forwarded to the Hydro-Electric  
Commission for their consideration.

## EUGENIA SYSTEM

### Map of the District of the Eugenia System

Mr. Francis has prepared a map showing the location  
of the generating stations, transformer stations and trans-  
mission lines of the Eugenia, Severn, and Huron  
Systems. Upon this map, a copy of which is herewith  
forwarded, the part of the Province covered by the Eugenia  
System is outlined in red. It consists of portions of the counties of Grey,  
Huron and Bruce, and extends north and south about 50 miles,  
and east and west 25 miles.



HYDRO-ELECTRIC INQUIRY COMMISSION  
W.D. GREGORY, CHAIRMAN  
ECONOMICS OF H.E.P.C. DISTRIBUTION SYSTEMS,  
EUGENIA SEVERN AND WADDELL'S SYSTEMS,  
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COPY

REPORT A111111

GENERATING STATIONS  
\* LOW TENSION TRANSFORMER STATIONS  
o MUNICIPALITIES SERVED BY H.E.P.C. WITHOUT LOCAL TRANSFORMER STATIONS.  
NOTE: TRANSMISSION LINE VOLTAGE SHOWN THIS 0-10,000



Historical Sketch  
To His Honour Henry Cockshutt,

Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:-

In pursuance of the directions contained in your commission to us to inquire into and report upon any power developments undertaken by the Hydro-Electric Power Commission of Ontario, (hereinafter called "the Commission"), we have inquired into the power development of the Commission known as the "Eugenia System" and respectfully submit our report thereon. With our report we present the reports of our Consulting Engineer, Mr. Walter J. Francis, on the Engineering Economics of the Eugenia System, and of our Auditors, Messrs. Price, Waterhouse & Co., on the accounts of the System.

District served by "Eugenia System"

Mr. Francis has prepared a map showing the location of the generating stations, transformer stations and transmission lines of the Eugenia, Severn, Wasdell's and Muskoka Systems. Upon this map, a copy of which prefaces this report, the part of the Province served by Eugenia System is outlined in red. It consists of portions of the counties of Grey, Dufferin and Bruce, and extends north and south about 50 miles, and east and west 75 miles.



To His Honor Henry Cockshutt,

Lieutenant-Governor of the Province of Ontario.

May it Please Your Honor:-

In pursuance of the directions contained in your commission to us to inquire into and report upon any power developments undertaken by the Hydro-Electric Power Commission of Ontario, (hereinafter called "the Commission"), we have inquired into the power development of the Commission known as the "Hagersia System" and respectfully submit our report thereon. With our report we present the reports of our Consulting Engineer, Mr. Walter J. Francis, on the Engineering Economics of the Hagersia System, and of our Auditors, Messrs. Price, Waterhouse & Co., on the accounts of the System.

District served by "Hagersia System"

Mr. Francis has prepared a map showing the location of the generating stations, transformer stations and transmission lines of the Hagersia, Severn, Wabigoon and Mackinac Systems. Upon this map, a copy of which precedes this report, the part of the Province served by Hagersia System is outlined in red. It consists of portions of the counties of Grey, Huron and Bruce, and extends north and south about 50 miles, and east and west 75 miles.



Historical Sketch

By Order-in-Council dated November 6th, 1913, the Commission was authorized, pursuant to the provisions of the Power Commission Act, to develop the water power known as Eugenia Falls, to purchase the works, assets, real property and rights of the Georgian Bay Power Company at Eugenia Falls; to purchase such riparian rights as might be found necessary in the Commission's opinion for the complete ultimate development of the site; to purchase material and equipment for the construction of a plant at Eugenia Falls, and to purchase material and equipment for transmission lines and transformer stations in the district.

In accordance with this Order-in-Council, the Commission purchased on May 5th, 1914, from the Georgian Bay Power Company, Limited, for a consideration of \$60,000, all the lands and water power privileges owned by that company in the vicinity of Eugenia Falls.

Concurrently the Commission purchased approximately 1525 acres of land, and in addition thereto, 175 acres of land were expropriated. On the properties so acquired the Commission constructed a reinforced concrete dam and an earth filled storage dam and flooded practically the whole area.

The Eugenia Falls generating station was constructed on the properties so acquired and was put into operation on



Witnesses

By Order-in-Council dated November 6th, 1912,

the Commission was authorized, pursuant to the provisions of the Power Commission Act, to acquire the entire power of the Province of Ontario, to purchase the water, power, and property and rights of the Ontario Hydro Electric Commission and to acquire the rights of the Ontario Hydro Electric Commission in the Province of Ontario. The Commission is authorized to acquire the rights of the Ontario Hydro Electric Commission in the Province of Ontario, to purchase the water, power, and property and rights of the Ontario Hydro Electric Commission and to acquire the rights of the Ontario Hydro Electric Commission in the Province of Ontario.

In accordance with this Order-in-Council, the

Commission purchased on May 1st, 1914, from the Ontario Hydro Electric Commission, Limited, for a consideration of \$2,000,000, all the lands and water power privileges owned by that company in the vicinity of Niagara Falls.

Subsequently the Commission purchased approxi-

mately 1500 acres of land, and in addition thereof, 175 acres of land were expropriated. On the properties so acquired the Commission constructed a reinforced concrete dam and on each side thereof two large powerhouses. The whole area.

The Niagara Falls generating station and transmission lines are situated on the properties so acquired and are now being constructed.



November 18th, 1915. It had a rating of 3,200 horsepower according to the Hydro-Electric Power Commission practice.

On February 10th, 1916, the Commission entered into an agreement with the Pine River Light and Power Company for the purchase of the Orangeville-Shelburne-Horning's Mills System, the consideration being \$43,570.00.

In the latter part of 1916, the Commission constructed a tie line of about 24 miles in length from the Eugenia Falls generating station to Collingwood distributing station on the Severn System, thus allowing of the interchange of power amongst the Eugenia, the Severn and the Wasdell's Systems.

The demand for power continued to increase and in 1917 the Commission added a further generating unit, thus doubling the capacity of the original plant. This additional 3,200 horsepower was placed in service February 29th, 1920.

There has been continuous growth of the system since it was put in operation. At first six municipalities were supplied, viz: Chatsworth, Dundalk, Durham, Flesherton, Mount Forest and Owen Sound, but during the period from 1915 to 1920 eleven municipalities were added to the system, namely, Arthur, Chesley, Elmwood, Grand Valley, Hanover, Holstein, Markdale, Neustadt, Orangeville, Shelburne and Tara. In 1921 six more municipalities were added, viz: Kincardine, Lucknow, Priceville, Ripley, Teeswater and Wingham.



... it was a matter of 2,500 horsepower  
... the Hydro-Electric Power Commission  
... the Commission  
... the Hydro-Electric Power Commission

... for the purchase of the Orangeville-Hydro-Electricity  
... the Commission being \$45,570.00.

... in the latter part of 1916, the Commission com-  
... the line of which is shown in the  
... station to Collingwood distributing  
... the inter-  
... the Government and the  
... the Commission.

... The Commission continued to increase and in  
... the Commission added a further generating unit, thus  
... the capacity of the original plant. This additional  
... the Commission was placed in service in 1921.  
... There has been continuous growth of the system

... it was not in operation. It was not until  
... the Commission, via Chatsworth, Darnley, Waberton,  
... and Owen Sound, but during the period from 1916  
... the Commission was added to the system, namely,  
... the Commission, Darnley, Waberton, and Owen Sound.  
... the Commission, Darnley, Waberton, and Owen Sound.  
... the Commission, Darnley, Waberton, and Owen Sound.



On the 15th May, 1922, the Eugenia Hydro-Electric Association, consisting of representatives from the various municipalities served, was formed for the purpose of securing investigation and adjustment of any complaints by the municipalities and for giving general expression to the collective views of the municipalities.

At October 31st, 1922, the system was serving twenty-three municipalities and sundry customers at Horning's Mills.

The combined population of the municipalities served by the Eugenia System on October 31st, 1921, was about 40,000. The ratio of consumers to population is 22 per cent. of the population of these municipalities. The power load of the system increased from 1,598 horsepower in 1916 to 5,520 horsepower in 1921.

Expenditures of the Commission  
in Respect of the System

On October 31st, 1921, the total investment on account of the Eugenia System was \$2,048,663.00, as follows:

Power Development	\$990,438.00
Wood Pole Lines	815,629.00
Transforming & Distributing Stations	240,501.00
Rural Lines	2,095.00
	<u>\$2,048,663.00</u>



On the 18th May, 1922, the Federal Hydro-  
Electric Commission, composed of representatives from  
the various municipalities involved, was formed and the  
possibility of securing investment and adjustment of any  
requirements by the municipalities and the public power  
authorities for the electric power of the municipality.  
At present, the 1922, the system was operating

through three municipalities and energy consumers at  
Municipalities' Office.

The installed population of the municipalities  
served by the Hydro-Electric Commission, 1922, was  
about 40,000. The ratio of consumers to population is  
22 per cent. of the population of these municipalities.  
The power load of the system increased from 1,500 horse-  
power in 1911 to 2,410 horsepower in 1921.

Investment of the Commission  
in the System of the System

On October 31st, 1921, the total investment on  
part of the Hydro-Electric Commission was \$2,000,000 as follows:

Power Development	\$1,000,000.00
Transmission Lines	100,000.00
Substation	50,000.00
Transmission Station	250,000.00
Power Lines	1,000,000.00
	<hr/>
	\$2,400,000.00



The investment in Power Development, \$990,438.00, is comprised approximately of the following items:

Land & Water Rights	\$127,200.00
Dams & Water Structures	439,700.00
Power House	144,700.00
Equipment	278,400.00
	<u>\$990,000.00</u>

No amount for "Intangibles" is included in the above.

The fractional capital cost per rated plant horse-power developed for the years 1915 to 1921, inclusive, is shown in the following table:

COPY

	1915	1916	1917	1918	1919	1920	1921
Power Development	\$187.40	\$203.00	\$205.70	\$262.52	\$299.00	\$153.01	\$154.70
Transmission Lines	76.00	139.20	157.00	161.92	170.00	113.71	127.50
Transforming & Distributing Stations	5.20	16.60	36.20	44.70	50.49	32.31	37.60
Rural Lines	-	-	-	.49	.53	.26	.31
T o t a l	\$268.60	\$358.80	\$398.90	\$469.63	\$520.02	\$299.29	\$320.11

The large rise in the unit costs in 1918 and 1919 is due to large capital expenditures being made in those years from which no additional power was made available until 1920, when the new unit at Eugenia Falls came into service with a consequent drop in the unit costs.



The investment in Power Development, \$390,488.00,

is comprised approximately of the following items:

Land & Water Rights	\$115,000.00
Power House	144,700.00
Equipment	275,400.00
<u>Total</u>	<u>\$534,700.00</u>

As shown the investment is contained in the

above.

The fractional capital cost per rated plant horse-

power developed for the years 1916 to 1921, inclusive, is

shown in the following table:

COPY					
Year	1916	1917	1918	1919	1920
Power Developed	1,217.00	1,217.00	1,217.00	1,217.00	1,217.00
Transmitted	78.00	78.00	78.00	78.00	78.00
Losses	10.00	10.00	10.00	10.00	10.00
Transmission & Distribution	10.00	10.00	10.00	10.00	10.00
Station	10.00	10.00	10.00	10.00	10.00
Rural lines	-	-	-	-	-
Total	1,325.00	1,325.00	1,325.00	1,325.00	1,325.00

The large rise in the unit costs in 1918 and 1919 is

due to large capital expenditures being made in those years for

which no fractional power was made available until 1920, when

the new unit at Republic Falls was made available with a consequent

drop in the unit costs.



Total Revenues

The following table gives the Commission's revenues of the system in the years 1916 to 1921, inclusive:

	1916	1917	1918	1919	1920	1921
Power sold to Municipalities			\$ 68,760	\$93,317	\$160,198	\$221,833
Power sold to Sundry Customers			13,846	20,878	6,149	4,069
Power sold to Severn System			34,541	26,961	436	6,418
	\$36,670	\$113,170	\$117,147	\$141,156	\$166,783	\$232,320

COPY

Total Cost of Power

The cost of power, subdivided under various headings, for the years 1916 to 1921, inclusive, as shown by the accounts of the Commission and without taking into consideration the retroactive reduction of renewal reserve hereinafter mentioned, appears in the following table:

	1916	1917	1918	1919	1920	1921
Operating Costs -	-	-	\$ 5,909	\$11,279	\$13,150	\$16,824
Maintenance -	-	-	16,405	14,833	13,809	26,974
Overhead and General Expenses	\$14,584	\$25,473	12,286	24,092	35,221	41,801
Interest	34,206	55,762	50,793	59,366	76,885	88,087
Renewals	-	31,935	26,121	28,746	29,972	44,302
Sinking Fund	-	-	-	-	-	13,157
Contingencies	-	-	1,023	1,088	639	1,175
	\$48,790	\$113,170	\$112,537	\$139,404	\$169,876	\$232,320







'Operating Costs' in the foregoing table include the wages of power house operators, linemen, station attendants, etc., power purchased from other sources, supplies and all miscellaneous items grouped under this heading.

'Maintenance' is a grouping into one item of all charges for labor and materials in the books of the Commission against the individual portions of the plant, stations, lines and distributing stations.

'Overhead and General Expenses' - Under this heading are included the system's proportion of head office salaries, field office salaries, executive expenses, automobile expenses, printing and stationery, stores operations, taxes, insurance, rents, legal expenses, etc., as apportioned by the Commission.

The items 'Interest' and 'Renewals', 'Sinking Fund', and 'Contingencies' are self-explanatory.

A comparison of the foregoing tables of Total Revenues and Total Costs will show that in 1918, 1919 and 1920 there were small differences between the total revenues and the total costs of power, there being a surplus of \$4,610.00 in 1918 and of \$1,752.00 in 1919 and a deficit of \$3,093.00 in 1920. In order that the total revenue and total costs of power might balance in each year, these items were transferred to Contingency Reserve Account.



'Spending State' is the spending table

the wages of each State's expenditure. It shows, during 1907-

1908, that the State Government has been able to supply

and all expenditures have been covered by its income.

'Maintenance' is a grouping into one item of all

expenses for labor and materials in the work of the State-

also against the individual portions of the State, namely,

State and district expenses.

'General and Special Services' - State only

includes and includes the State's expenditure of State Service

expenses, their other services, executive expenses, legislative

expenses, judicial and executive, State expenditure, State

expenditure, State, local expenditure, State, as expenditure of the

Commission.

The items 'Interest' and 'Renewals', 'Sinking Fund',

and 'Contingencies' are self-explanatory.

A comparison of the foregoing tables of Total

Revenue and Total Expenditure will show that in 1906, 1907 and

1908 there were still differences between the total revenues

and the total needs of the State, there being a surplus of

\$4,410.00 in 1906 and of \$1,732.00 in 1907 and a deficit of

\$8,978.00 in 1908. On other items the total revenues and

total needs of the State were almost equal in each year, there being

very small differences in certain items.



The reduction of the renewal reserve made in December, 1922, hereinafter referred to, of course, reduces the total cost of power from the inception of the system. A portion of the reduction has been credited to contingencies reserve and the balance applied as a credit to the municipalities, and in a number of cases cancels the amounts owed by them to the Commission at October 31st, 1921.

#### Costs of Power

The following table, showing the detailed costs per horsepower billed, illustrates in what respect and to what extent the operating costs and fixed charges have increased:

	1918	1919	1920	1921
Operating Costs	\$ 1.44	\$ 2.59	\$ 3.92	\$ 3.58
Maintenance	4.02	3.41	4.12	5.74
Overhead & General Expenses	3.01	5.54	10.50	8.90
Interest	12.41	13.65	22.91	18.75
Renewals	6.38	6.61	8.93	9.43
Sinking Fund	-	-	-	2.80
Contingencies	.25	.25	.25	.25
Total Cost per Horsepower				
Billed . . . .	\$ 27.51	\$32.05	\$50.63	\$49.45

The amounts shown above for 'Renewals' are subject to reduction because of the change made by the Commission in the renewal rate to be retroactive from December 20th, 1922. This has the effect of slightly reducing the total costs shown above.







Reserve for Renewals

The balance in the reserve for renewals in respect of properties of the Eugenia System amounted at October 31st, 1921, to \$181,830.21, a brief analysis of which follows:

Period	Provision	Interest at 4%	Together
<u>Year ending Oct. 31,</u>			
1916	\$14,570.87		\$14,570.87
1917	23,043.56	\$ 592.82	23,626.38
1918	26,121.05	1,527.89	27,648.94
1919	28,746.24	2,633.71	31,379.95
1920	29,972.45	3,889.03	33,861.48
1921	44,301.87	5,243.49	49,545.36
<u>Together</u>	<u>\$166,756.04</u>	<u>\$13,876.94</u>	<u>\$180,632.98</u>
<u>Add -</u>			
Additional reserve provided on second-hand equipment purchased	\$ 4,084.02		
Reserve applicable to equipment transferred from other systems	2,806.57		
	\$ 6,890.59		
Interest on above items	745.79		7,636.38
<u>Together</u>			<u>\$188,269.36</u>
<u>Deduct -</u>			
Cost of overhauling and rebuilding turbines	\$ 3,333.60		
Accruals on transformer shipped to Walkerton	1,182.50		
Accruals on cross-arms, braces, etc., removed	1,279.92		
Sundry charges	528.02		
	\$ 6,324.04		
Interest applicable to above charges	115.11		6,439.15
<u>Balance as per books, at October 31, 1921</u>			<u>\$181,830.21</u>







In December, 1922, the Commission decided to reduce the depreciation rate for this system to 1.25% and to make this retroactive to the date of first operation.

The revision was made by the Commission, and Messrs. Clarkson, Gordon & Dilworth, the Government Auditors of the Commission's accounts, state that it has resulted in reducing the renewal reserve by approximately \$68,000.00, of which \$54,000.00 has been credited to the municipalities and \$14,000.00 to reserve for contingencies. As before indicated this reduction has the effect of decreasing the cost of power for each year in which provision was made for such reserve to all municipalities supplied with power by the Commission during such year, and pro tanto relieves of liability for unpaid balances those municipalities which have not paid to the Commission the full amount of the power bills rendered them, gives credit balances to those that have, and if other unit costs do not increase, will reduce



(10)

Additional to the reserve for renewals were

provided by the provision in the cost of power of an annual  
 charge of \$1.75 per unit of capacity of the generating equipment  
 applied to the total capacity of the system and which is  
 the opinion of the Engineers of the Commission, provision  
 for depreciation was necessary, together with interest at  
 the rate of 4 per cent on the balance in the reserve  
 account.

In December, 1912, the Commission decided to re-

duce the depreciation rate for this system to 1.25 per cent

and this retroactive to the date of first operation.

The revision was made by the Commission, and

where the original estimate was \$1,000,000, the revised estimate

of the Commission's estimate, state that it has resulted in

reducing the renewal reserve by approximately \$66,000.00,

and while \$14,000.00 has been retained in the municipalities

and \$12,000.00 is retained for contingencies. In 1913

increased this reduction was the effect of decreasing the

cost of power for each year in which provision was made

for such reserves to all municipalities supplied with power

by the Commission during each year, and the same relieves

of liability for unpaid balances those municipalities which

have not paid to the Commission the full amount of the power

bills rendered them, gives credit balances to those that

paid, and it is estimated that this will reduce



the future annual price of power in all municipalities in the system.

While our Consulting Engineer has reported that the reserve for renewals as at October 31st, 1921, was somewhat larger than was necessary, the amount of the reduction made by the Commission in December, 1922, has not as yet been reported upon by him, and the general subject of reserve for renewals for all systems will be further dealt with in our General Report.

#### Reserve for Sinking Fund

The amount to the credit of sinking fund on October 31st, 1921, was for the Eugenia System \$13,156.54, and for Eugenia Rural Lines \$144.71.

The Power Commission Act requires municipal corporations to pay to the Commission "an annual sum sufficient to form in thirty years with interest at four per cent. per annum, a sinking fund for the repayment of the advances made by Ontario under this Act for the payment of the cost of the works." The Act further provides that the Commission may relieve a municipal corporation "from payment of any sum on account of sinking fund account for the first five years.... the amounts required from such corporation on sinking fund account shall be payable during the then next ensuing thirty years." The basis for ascertaining the amount of the reserve for sinking fund each year is, for the Eugenia System, the capital cost of the power development, transformer stations, transmission lines, etc., completed and in operation.

(11)

the three annual rates of power in all municipalities in

the system.

While our Consulting Engineer has reported that

the system for power is as follows: 1921, 1922, and 1923,

and further than was necessary, the amount of the

made by the Commission in 1921, 1922, and 1923 has not been

reported upon by him, and the general subject of power

for power for all systems will be further dealt with in

our General Report.

#### Report for 1921-1922

The amount of the cost of electric power in 1921

1921, 1922, and 1923, was \$15,155.54, and for

Eugene Rural Lines \$144.71.

The Power Commission has reported municipal corpora-

tion to pay to the Commission an annual sum of \$15,155.54

and in 1921, 1922, and 1923, the amount of the

a similar sum for the payment of the interest on the

interest on the sum and for the payment of the sum of the

sum. The Act further provides that the Commission may

revoke a municipal corporation from payment of any sum or

amount at any time and at any place for any reason.

The amount reported from each corporation is as follows:

amount shall be payable during the year ending 1921

sum. The basis for ascertaining the amount of the interest

for sinking fund each year is, for the Eugene system, the

capital cost of the power development, transmission, and

transmission lines, etc., ascertained and in operation.



The collection of sinking fund from the twenty-three municipalities in the Eugenia System was deferred for a period of five years from the date on which they respectively first received electrical power. The right to defer the period for contributions to the Sinking Fund is given the Commission by the Power Commission Act.

Seventeen municipalities had not, at October 31st, 1921, been receiving electrical service for a full period of six years, therefore, the sinking fund requirement, amounting to \$21,609.57 in respect of these municipalities, was deferred until such time as the six-year period, in each instance, had elapsed. The amount of the sinking fund requirement for the year 1921, being the initial assessment against six municipalities and others taking power for a period of six years, is as follows:

Six Municipalities	\$11,622.58
Severn System	1,080.64
Walkerton Quarry	<u>453.32</u>
Total sinking fund provision at October 31st, 1921 . . . . .	<u>\$13,156.54</u>

The sinking fund reserve in respect of the Eugenia Rural Lines amounted to \$144.71 as at October 31st, 1921, having been paid in by the municipalities of Markdale and Flesherton.

The question as to the time when the building up of a sinking fund should be begun depends upon the special circumstances of each case. In the case of the Nipigon, for instance, where a market has to be created, contribution to a sinking fund

The collection of mining land from the twenty-  
five municipalities in the region lying between the  
city and the State from the date on which they respectively  
first received electrical power. The right to defer the  
payment of assessments in the mining land is given the  
municipalities by the State Constitution.  
However, municipalities are not allowed to  
defer the payment of assessments for a full period of  
five years. Therefore, the mining land requirement, amounting  
to \$1,809.57 in respect of these municipalities, was deferred  
until such time as the mining land is sold. In that instance, the  
amount of the deferred payment and requirement for the  
year 1911, shall be paid in full. Assessment against the mining  
land shall be paid in full in the year 1911 or in the year  
in which the land is sold.

COPY

City of New York	City of New York
Department of Public Works	Department of Public Works
Division of Street Cleaning	Division of Street Cleaning
1911	1911
1,809.57	1,809.57
1,809.57	1,809.57
1,809.57	1,809.57

The amount of the deferred payment in the year 1911  
shall be paid in full in the year 1911 or in the year  
in which the land is sold. The question as to the time when the building up of  
the mining land shall be paid in full is left to the discretion of the  
municipalities. In the year 1911, the amount of the deferred payment  
shall be paid in full in the year 1911 or in the year in which the  
land is sold.



might well be deferred for the full period authorized by statute, while in cases where a market for the full amount of power generated exists from the first, there might be no good reason for deferring. It seems, however, to have been the policy of the Commission to postpone in all cases contribution to the sinking fund for the full period of five years.

#### Reserve for Contingencies

The Power Commission Act authorizes the Commission to establish a reserve for unforeseen expenditures for the purpose of providing for special losses or expenses not arising at regular intervals and not wholly applicable to the period in which incurred.

The following is a brief summary statement of the reserve for contingencies set apart in respect of the Eugenia System:

Amounts included as a part of the cost  
of power delivered -

to Municipalities	\$5,629.09	
to Severn System	1,040.77	
to Sundry Consumers	<u>317.42</u>	\$ 4,987.28

Net Profit on sale of power to private companies	3,271.94
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Profit on sale of miscellaneous equipment, etc.	9,794.73
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Interest at 4 per centum per annum	<u>2,411.30</u>
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<u>Together</u>	\$20,465.25
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<u>Deduct:</u> Expenditures and charges to cover contingencies met with	<u>8,385.67</u>
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<u>Balance at October 31, 1921</u>	<u>\$12,079.58</u>
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Mr. Francis, in his report to us before referred to, states that, having in mind the heavy losses which might be incurred through catastrophe, he is of opinion that the reserve for contingencies should be augmented by increasing the annual allowance until the fund amounts to \$25,000.00 to \$30,000.00, when a readjustment might be made to meet conditions. The reduction made by the Commission in December, 1922, in the renewal reserve fund and the crediting of \$14,000.00 of such reduction to the reserve fund for contingencies increases the latter fund approximately to the amount recommended to us by Mr. Francis.

### Accounts with Municipalities

These are of two classes:

- (a) Power Accounts Receivable
- (b) Due by or to Municipal Corporations on annual adjustment by the Commission of power costs for the year.

(a) The balances of power accounts receivable at October 31st, 1921, amounting to \$46,539.37, represent unpaid balances in respect of interim power bills rendered to the municipalities. Investigation of these accounts on September 20th, 1922, showed that on that date of the \$46,539.37 due on October 31st, 1921, \$3,735.43 still remained unpaid.

(b) At the close of each fiscal year the interim power bills are adjusted to meet the total cost of power for the year.

On October 31st, 1921, there was a debit balance

( 2 )

Mr. Francis, in his report to me before referred  
to, states that, having in mind the heavy losses which might  
be incurred through depreciation, he is of opinion that the  
sums for depreciation should be expended as follows:  
the annual allowance until the year ending 30-6-30, of £  
£5,000, and a further sum of £5,000 in each of the years  
1931-32. The reduction made by the Commission in December,  
1931, in the renewal reserve fund and the crediting of  
£10,000 to the reserve fund for con-  
sideration between the latter fund approximately to the  
amount recommended to me by Mr. Francis.

Y902

1. The Commission has the honor to acknowledge the receipt of your letter of the 14th inst. in relation to the above-captioned matter.

(a) The balance of power accounts receivable at December 31, 1931, amounted to \$11,111.17. This amount was included in the balance of power bills rendered to the municipalities. Investigation of these accounts on December 31, 1932, showed that on that date of the \$11,111.17 due on power bills, \$1,111.17 still remained unpaid.

On January 14, 1931, there was a Bobb balance



amounting to \$103,477.55 against twenty-two municipalities in the system, there being only one municipality, namely Hanover, with a credit balance, in the amount of \$2,758.90.

The Power Commission Act provides that the Commission may, during the first three years after any municipality shall first begin to take power, extend the time for payment of the sums payable by any municipality. Some of the balances due extend back to the first year of operation, but at the date, September 20th, 1922, at least ten of the twenty-two municipalities were in default of payment of power charges incurred subsequent to the three-year period referred to above.

### Results of Operation

#### (a) Estimated Power Loads compared with Actual Power Loads

This comparison is shown in the following table:

Municipality	Date Power was First Taken	Yearly Minimum Load HP	Yearly Maximum Load HP	Average Yearly Load HP	Estimated Load Required HP
Arthur	Dec. 1916	102.0	151.9	129.3	150.0
Chatsworth	Dec. 1915	23.9	31.1	28.4	75.0
Chesley	June 1916	76.8	250.3	164.8	400.0
Dundalk	Nov. 1915	60.2	97.7	84.5	250.0
Durham	Nov. 1915	58.2	220.2	104.6	125.0
Elmwood	March 1918	45.8	54.3	50.3	50.0
Flesherton	Nov. 1915	33.3	58.1	45.8	50.0
Grand Valley	Dec. 1916	51.5	62.9	58.1	No Estimate
Hanover	Sept. 1918	113.8	1040.7	488.4	400.0
Holstein	April 1916	6.4	23.0	11.0	50.0
Kincardine	March 1921	92.5x	92.5x	92.5x	350.0
Lucknow	July 1921	127.6x	127.6x	127.6x	100.0
Markdale	Feb. 1918	67.0	85.7	76.2	150.0
Mount Forest	Nov. 1915	111.7	185.6	139.4	400.0
Neustadt	Dec. 1917	18.5	126.3	76.3	100.0
Orangeville	June 1916	96.9	142.1	127.3	300.0
Owen Sound	Dec. 1915	934.9	1391.2	1087.9	1200.0
Priceville	March 1921	6.6x	6.6x	6.6x	25.0
Ripley	Jan. 1921	48.0x	48.0x	48.0x	100.0
Shelburne	June 1916	63.1	183.6	138.7	300.0
Tara	Jan. 1918	36.2	44.6	40.6	100.0
Teeswater	Dec. 1920	69.4x	69.4x	69.4x	150.0
Wingham	Dec. 1920	329.5x	329.5x	329.5x	No Estimate

(x) - Municipalities in operation less than a full year.  
Load stated on basis of period of operation.

(12)

amounting to \$15,000,000 in 1935, and \$15,000,000 in 1936, there being only one municipality, namely, Knoxville, with a credit balance, in the amount of \$2,752.90.

The power companies are entitled to the same rate of return, and the same rate of interest on their investments, as the other utilities in the State. The rate of return on the investment in the power companies is 6% per annum, and the rate of interest on the investment is 4% per annum. The rate of return on the investment in the power companies is 6% per annum, and the rate of interest on the investment is 4% per annum. The rate of return on the investment in the power companies is 6% per annum, and the rate of interest on the investment is 4% per annum.

Results of operation

(a) Comparison of actual loads operating with actual power loads

This comparison is shown in the following table

Utility	Actual Power Load	Actual Power Load	Actual Power Load	Actual Power Load	Actual Power Load
Atlantic	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Carroll	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Cherokee	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Clatsop	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Columbia	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Delaware	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Durham	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Florida	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Georgia	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Illinois	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Indiana	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Iowa	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Kansas	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Kentucky	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Louisiana	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Maine	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Massachusetts	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Michigan	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Minnesota	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Mississippi	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Missouri	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Montana	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Nebraska	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Nevada	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
New Hampshire	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
New Jersey	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
New Mexico	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
New York	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
North Carolina	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
North Dakota	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Ohio	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Oklahoma	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Oregon	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Pennsylvania	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Rhode Island	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
South Carolina	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
South Dakota	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Tennessee	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Texas	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Vermont	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Virginia	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Washington	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
West Virginia	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Wisconsin	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Wyoming	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000

(b) - Comparison of actual loads operating with actual power loads  
Load stated on basis of power of operation.



Disregarding the municipalities in which loads were not estimated and municipalities which had not been in operation for a full year, the estimated loads exceeded the actual yearly average loads by approximately 46%.

(b) Estimated Cost per horsepower compared with  
Actual Cost per horsepower

The following is a table of the estimates as submitted to the municipalities in the Eugenia System by the Commission as compared with the actual costs of power supplied during the full year periods of operation. The figures of the yearly actual cost per horsepower and those of percentage of actual cost over estimated cost appearing in this table were deduced after examination of the accounts of the Commission to October 31st, 1921, and are subject to revision because of the retroactive reduction made in December, 1922, in the renewal reserve:

Investigating the activities in which  
these men are engaged and maintaining records of  
and their activities for a long time, the following  
facts are given and which are given by  
approximately 100.

(1) Estimated 100 men are engaged in the

following activities:

The following is a table of the activities  
as estimated by the investigation in the regions  
given by the investigation with the total  
number of men engaged during the last year periods of  
operation. The figures in the fourth column are the  
percentage of men engaged in each of the  
activities and given in percentage of total men  
engaged. The figures in this table were based  
upon examination of the records of the investigation  
for the year 1911, and are subject to revision  
of the respective records when an estimate is  
for the year 1912.



Municipality	Yearly Minimum Actual Cost per H.P.	Yearly Maximum Actual Cost per H.P.	Yearly Average Actual Cost per H.P.	Estimated Cost Prepared by Hydro Commission	Per Cent. of Actual Cost over Estimated Cost
Arthur	\$ 52.82	\$ 86.37	\$ 69.56	\$ 45.00	55
Chatsworth	31.53	61.31	44.39	28.85	53
Chesley	39.97	74.35	49.10	40.57	21
Dundalk	23.26	47.67	36.30	27.30	31
Durham	26.77	46.78	32.92	33.97	17
Elmwood	42.84	54.42	49.07	36.07	36
Flesherton	28.92	58.61	40.12	25.28	58
Grand Valley	41.35	76.26	58.08	47.50	22
Hanover	26.46	43.32	35.35	33.90	04
Holstein	72.25	185.06	124.79	43.50	187
Kincardine	114.43x	114.43x	114.43x	44.00	160x
Lucknow	100.05x	100.05x	100.05x	60.00	66x
Markdale	29.75	36.86	29.69	23.24	27
Mount Forest	44.05	60.40	60.09	34.51	74
Neustadt	51.65	86.14	57.31	43.00	33
Orangeville	30.15	69.41	51.82	35.42	46
Owen Sound	20.03	40.49	31.28	33.09	00
Priceville	115.71x	115.71x	115.71x	40.00	189x
Ripley	104.16x	104.16x	104.16x	60.00	73x
Shelburne	27.94	48.88	39.82	39.19	01
Tara	91.95	107.25	100.36	36.37	176
Teeswater	69.46x	69.46x	69.46x	35.00	98x
Wingham	64.60x	64.60x	64.60x	38.00	70x

x - Municipalities in operation less than a full year.  
Rates per horsepower stated on annual basis.

It will be noted from the foregoing table that the yearly average actual cost has exceeded the estimated cost in all of the municipalities except one. Disregarding the municipalities that have not been in operation for a full year, this excess ranged from 1% to 187% above the estimated cost as submitted by the Commission and on the strength of which agreements





to take power were secured. It is not surprising that the large excess of costs over estimates was made the main subject of complaint by representatives of the municipalities, dealt with later on in this Report. In the case of but nine of the twenty-three municipalities was the yearly minimum actual cost less than the estimated cost.

During the years 1918 to 1921, inclusive, the total actual cost of power as determined by the Commission exceeded by \$62,344.00 the total monthly interim power accounts rendered to the municipalities for these years. The items comprising this amount of \$62,344.00 were debited to the municipalities in the respective years to which they applied and constitute the adjusting accounts or "Thirteenth Bills" rendered to the municipalities after the end of each of these fiscal years.

#### Sale of Power to other Systems

By the sale of power to the Severn System the Eugenia System made a profit during 1918 of \$9,299.00, and in 1919 a profit of \$1,691.00. This operation during 1920 was carried on at a loss amounting to \$8,782.00 for that year. During 1921 a small profit of \$28.00 was made.

The effect of one system of the Commission receiving a profit from power delivered to another system would appear to be that the receiving system in such case pays more than the actual cost of the power received, and the system which delivers the power has its cost of power





reduced by the amount of the profit made by the sale. This is contrary to the basic principle of the Power Commission Act, namely, that power shall be delivered to each municipality at the actual cost thereof to the Commission.

#### Proposed Extensions of the System

Extensions in connection with transmission of power in the System estimated to cost about \$260,000.00 for 1922 and 1923, were said to have been undertaken or to be contemplated by the Commission, in this being included an allowance for the conversion of power from the Niagara System at 25 cycles for the use on the Eugenia System at 60 cycles, and for a large extension of rural lines. It is understood also that expenditures of estimated amounts of \$50,000.00 for general improvements and of \$169,000.00 for a second pipe line, surge tank and penstock were contemplated for 1923.

Our Auditors advise that the items detailed above in the total amount of \$479,000.00 were appropriated under votes 113 and 115, but that during the period from October 31, 1921 to March 31, 1923, net capital expenditures amounted to only \$15,033.89. We understand, however, that tenders are now being taken for the construction of the second pipe line which will be undertaken this year.

...of the amount of the profit made by the sale. This is contrary to the usual principle of the power companies, that power shall be delivered to each municipality at the actual cost thereof to the companies.

Estimated Expenditures of the System

Extension in connection with transmission of power in the system estimated to cost about \$100,000.00 for 1911 and 1912, with a total of about \$200,000.00 to be contemplated by the companies, in their future plans, in connection with the conversion of power from the Niagara system of 50 cycles to the 60 cycle system at 50 cycles, and for a large extension of transmission lines. It is understood also that expenditures of estimated amount of \$10,000.00 for general improvements and at \$15,000.00 for a second pipe line, water line and power line were contemplated for 1911.

Our Auditors advise that the items detailed above in the fiscal year of 1911, 1912, were approximately \$100,000.00 and that during the fiscal year 1913, 1914 to 1915, and capital expenditures amounted to only \$10,000.00. It is understood, however, that tenders are now being made for the construction of the second pipe line which will be undertaken this year.



Future Sources of Power for the System

Power beyond the present capacity of the Eugenia Falls development is, or will soon be, required for the System. The undeveloped power sites in the district are capable of producing but a small amount of power and could only be utilized as reserve sources of supply for local purposes.

To meet present and future requirements it would seem that recourse must be had either to Niagara or French River and serious consideration should be given to the relative advantages and expense of obtaining a supply of power from one or the other of these rivers. To obtain a supply of power from the Niagara System necessitates the construction northwards of several short tie lines and eastwards of others from points where northerly branches of the Niagara System approach the southerly ends of the Severn and Wasdell's Systems, and also implies the installation of frequency changing apparatus to convert from 25 cycles to 60 cycles. To use power from the French River for the Muskoka System, the Severn, Wasdell's and Eugenia Systems, and possibly for the Nipissing Section and the northerly portion of the Trent Section of the Central Ontario System, long transmission lines would be required, but on the other hand, the complication of frequency changers would be avoided. If Niagara power be used for the district served by the Eugenia Development, it

General Remarks on the Project

The project is a hydro-electric scheme for the development of the river. The undeveloped power sites in the district are capable of producing a small amount of power and will only be utilized as reserve sources of energy for local purposes.

The main project and future developments are shown on the map. It is proposed that the river be dammed at several points and the water stored in the reservoirs. The water will be used for the generation of electricity and for the irrigation of the land. The project will also provide a source of water for the town of ... The cost of the project is estimated at ... The benefits of the project are ... The project will also provide a source of water for the town of ... The cost of the project is estimated at ... The benefits of the project are ...



might prove expedient to remove a number of municipalities now in the Eugenia System from that system and add them to the Niagara System with a re-apportionment of capital costs. On the other hand, if power be transmitted from French River an apportionment of the cost of this power should be made amongst the systems to which it is delivered.

Complaints Against the Commission's Administration.

1. Eugenia Hydro-Electric Association.

On the 15th May, 1922, representatives from various municipalities in the Eugenia System met at Durham and formed what is known as the Eugenia Hydro-Electric Association with the avowed object of securing investigation and adjustment of any grounds of complaint with the Commission.

At a meeting of the Executive Committee of the Association held at Owen Sound on September 19th, 1922, it was decided to forward to us a request for a hearing at which the views of the Association upon a number of subjects relating to the administration of the Eugenia System might be submitted.

A hearing was arranged for and held on September 26th and 27th, 1922, at which a large number of representatives from the municipalities interested were present and gave testimony. The general attitude of the Association was indicated by Dr. Hacking, who submitted a list of estimated and actual costs of power in the various municipalities and dealt more specifically with the case of the Town of Tara,

might have suggested to the Commission a number of modifications  
now in the Niagara River from that system and that it  
the Niagara System with a re-organization of the  
power. In the light of the fact that the  
Commission has an opportunity to see the  
Commission in making the system as a whole is in  
the Commission's hands.

1. Niagara Hydro-Electric Association.

In the 19th and 20th centuries, the  
Commission in the Niagara River and the  
what is known as the Niagara Hydro-Electric Association  
the avowed object of securing investigation and adjustment  
of any grounds of complaint with the Commission.

At a meeting of the Executive Committee of the  
Association held at the Hotel at Niagara Falls, N.Y., in  
was decided to forward to the Commission a report on  
which the views of the Association upon a number of subjects  
relating to the administration of the Niagara River should  
be submitted.

A hearing was arranged for and held on September  
19th and 20th, 1903, at which a large number of representatives  
from the various interested parties were present and  
testimony. The general attitude of the Association was  
indicated by Dr. Schuchman, who submitted a list of suggestions  
and asked for power in the various municipalities and  
which were specifically with the Commission.



and who, towards the conclusion of his evidence, stated:

"I wish to make it clear to you, gentlemen, that at our organization meeting in Durham in May last when about 75 representatives of 23 municipalities were present, every man voiced exactly the same complaint, and their dissatisfaction ran along the lines that I have taken up, that is, that the first costs, as estimated, have been greatly exceeded, and that the distribution system costs are doubled."

As will be seen from the table on page 17 of this Report there was a great disparity between the estimated and actual cost of power in the case of Tara, regarding which Dr. Hacking in his testimony commented as follows:

"The Hydro-Electric engineers came into that town in 1914 and 1916, and they told them that the rates would be \$37 per horsepower. Those engineers came in there in an advisory capacity to us, they were supposed to know. We did not, and we accepted their advice as to power needed, and, in addition, we were told that what we did not use we would not be asked to pay for. We contracted for 100 h.p., but the municipality didn't know whether they would need 100 horsepower or 500 horsepower. They trusted to the Hydro engineers to put them on the right track and, as I say, they gave them a rate of \$37. per horsepower.....The load increased but so did the rate and still we could not keep up. The 100 horsepower has nothing to do with it because.....charges are computed according to amount of power taken. On their power bills their thirteenth bill showed a difference of \$1,400. We are paying \$90 per horsepower today. We are not paying any sinking fund either....."

"If these engineers when they came into Tara had told us that it would cost as much as it has done, that we would have to pay interest and debenture charges on practically \$60,000 to get electric power into Tara, we would never have taken it, but they told us that the distribution system would cost \$7,500 and that the rate would be \$37 per horse-

and who, towards the conclusion of his evidence, stated:

"I wish to make it clear to you, gentlemen, that at our organization meeting in Durham in May last when about 75 representatives of 23 municipalities were present, every man present clearly saw and understood, and fully dissatisfied ran along the lines that I have stated to you. That the time has come, as estimated, have been greatly exceeded, and that the distribution system costs are doubled."

As will be seen from the table on page 17 of

17. Nothing in his testimony commented as follows:

... We are not paying any sinking fund ... \$1,400. We are paying \$300 per horsepower ... their thirteen bill showed a difference of ... amount of power taken. On their power bills ... The 100 horsepower had nothing to do with it ... did the rate and still we could not keep up ... per horsepower. ... The rate ... and, as I say, they gave them a rate of 4.5¢.

"All these engineers when they came into  
Tara had told us that it would cost as much as  
it has done, that we would have to pay in-  
crease and laborers wages as previously  
set, but we had almost given up then, we  
never gave up then, we then told us  
that the situation would be all right  
and that we would be all right."



power. They further stated from the platform, 'Gentlemen, if you do not use the 100 horsepower you do not have to pay for it.'

Dr. Hacking also stated that the uncertainty as to what the rates are going to be makes it impossible for him as chairman of the local commission to negotiate with a prospective manufacturer who may wish to locate in his town.

He also submitted a letter from the Chief Engineer of the Commission, dated May 11th, 1916, giving an estimated cost of power to Tara of \$36.37 per horsepower per annum. A paragraph of this letter reads as follows:

**COPY**  
"For your information we also wish to state that these rates are approximate and can be used by you in connection with the securing of contracts. They have not yet been passed officially by the Board as it is impossible for this to be done until arrangements are finally completed for service to your municipality, but in all probability there will be no change and they can be used for estimating purposes without fear of any change or increase that will affect the customers' bills to any great extent."

Mr. John Taylor, a representative from Hanover, stated that:

"In 1920 we got a thirteenth power bill that.....struck consternation among the users of the Eugenia System."

Mr. A. Filschic, Mount Forest, stated:

"They have increased our rates from \$34.51 to \$45, and they increased it from \$45 to \$65, with a deficit now at the present time of \$17,000 in round figures, that they are still holding over our municipality....."

"There is a big misunderstanding. Instead of paying \$34 we are now paying \$65. We were also





distinctly told that we would be better to have a plant capable of carrying 400 h.p. and if we didn't want 400 h.p. we would only pay for what we actually used....

"Some of the engineers were at Durham, and when they were asked anything the reply was, 'Well, we were only estimating.' They all got out from under. Mr. James distinctly stated from the platform in Mount Forest, in 1914, after their engineers had estimated and taken into consideration all the facts that \$34.51 was the outside price it could possibly be, and possibly it would be less."

Dr. Campbell, Orangeville, also made a statement from which the following is extracted:

"Like those other municipalities we have a grievance, or a fancied grievance, at least, in the fact that the rates quoted to us, the estimated rates, have been very greatly increased. We started in, in 1915, I think it was, at a rate of \$35 which has been increased until it is now \$65....We are probably more affected in that we are very close to a number of municipalities of similar size, situated on the Chippawa, or at least the Niagara System, who are enjoying a much more favorable rate. It handicaps our town very seriously, insofar as getting factories to locate there is concerned, and in fact for that matter, people who come there to reside. They are getting a much more favorable rate for domestic service in those other towns, and, in some cases, we are losing them, and we certainly cannot compete with them insofar as factory power is concerned."

Mr. W. Calder, Durham, stated as follows:

"The statements that were made by the Hydro officials at that time to the town of Durham were these: We believe we can supply you with power at the rate of \$31 per horsepower, and, later on, if you take on your cement plant and take a thousand more from us, because we are anxious to sell our power, we will reduce our rates to \$25. These were the conditions brought up to us in 1914. Then we set out, under those





conditions, to pass our by-law and debentures to establish Hydro power in Durham.

"As has been stated by the gentleman from Tara, we asked those engineers to be very exact in their statements. We, in our town, passed our statements on to our people. We desired to have satisfactory and direct information that we could depend on, and we said, now tell us the very worst that can occur in this matter rather than something you may imagine will occur, and the statements issued from the platform at various times in our town were those, you will own a plant at Eugenia and receive cheaper power from us than by developing your own power."

Mr. Calder also referred to the cost of the local distributing system overrunning the estimate by \$7,000.

The complaints of the representatives of this Association were discussed before us by engineers of the Commission, and the Chief Engineer on March 7th, 1923, submitted to Messrs. Price, Waterhouse & Co., our Accountants, a detailed memorandum of the reasons for variation in power costs in the Eugenia System. From this memorandum the following pertinent extracts are taken:

- A. "The rates decreased from 1916 to 1918 and during the latter year almost all of the municipalities with a few exceptions were receiving power at a cost less than the original estimated cost. From 1918 to 1920 costs increased, whereas since 1920 costs have been steadily decreasing again."
- B. "It should be borne in mind that the Eugenia System was placed in a very unfortunate position due to war conditions. In 1918 the plant was loaded, a considerable portion of the output being sold to the Severn System and used largely for munition purposes, and as all efforts were concentrated on munition production and in winning the war, during 1918 it was decided to increase the plant capacity at Eugenia so as to have power available to keep up with the demand of power for

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munition production. It was also figured that the demand for power in the Bruce County District and the gradual increase in load in the Eugenia municipalities would be such that there would still be a demand for power equal to the increased capacity of the plant after the munition load dropped off."

"1919 and 1920 were unfavorable years on the Eugenia System, due to the falling off of munition loads and to industrial depression. The loss of such loads in Collingwood as the closing down of the Collingwood Shipbuilding Company, and the loss by fire of the Imperial Steel & Wire Company, reduced the demands on the Severn System by 1000 h.p. thus curtailing the market for power in the Severn System from the Eugenia System. Furthermore, in 1920 the Eugenia System lost the load of the National Portland Cement Company, of Durham, which company went into liquidation."

C. "In 1917, 1918 and 1919 the sale of power to the Severn System was not only carrying the operating and fixed charges on the tie line between Severn and Eugenia Systems but was also carrying a large portion of Eugenia generating station capital as well as creating a net revenue over and above cost, which was distributed among all the municipalities."

"In 1920 the Eugenia System had to carry the tie line without revenue from the Severn System, and at the same time a share of the capital of the generating station, previously carried by the Severn System on account of sale of power to the latter, had to be carried by the Eugenia municipalities."

"Thus, the Eugenia System in 1920 was confronted with the loss of the Severn System and Companies' load, the revenue from which in 1919 was over \$47,000.00, and at the same time the Eugenia municipalities had to bear a larger portion of the capital of the generating station originally carried by the Severn System."

D. "An industrial slump such as occurred after the close of the war, in which there is a general falling off of loads throughout a district, means that costs will increase until industrial conditions become stabilized."





- E. "The steady increase in the rates paid for labor as well as the extra cost of material, increased very largely the operation and maintenance costs to all municipalities, both as far as plant and lines were concerned."

In the foregoing statement, the assertion that during 1918, "almost all of the municipalities with a few exceptions were receiving power at a cost less than the original estimated cost" is correct if the retroactive effect of the reduction in the charge for Renewal Reserves be taken into consideration. If the reduction be not considered, only nine out of the then seventeen municipalities were receiving power in 1918 at a cost less than the original estimate, and it is improbable that at the time the estimates were made the Commission was in a position to know that the renewal rates were higher than is now considered necessary.

In all dealings between the municipalities and the Commission there should be a free and frank disclosure by the Commission of increases in costs due to changes that may have been made after the submission of the estimates, so that the municipalities may have an opportunity to decide whether or not, in view of the additional cost which they would have to pay, they will or will not take power.

Complaint was made, by some of the representatives who appeared before us, in regard to construction and maintenance costs. Mr. John Legate, Chairman of the Owen Sound Hydro-Electric Commission, in the course of his evidence said:

for each device and its operation. The first  
, followed by the second and the third. The  
the network and a local area network.  
and, respectively, its of the network.  
the network and the local area network.

is the correct statement, the material has been

1948, "Almost all of the municipalities with a few exceptions  
were receiving power at a rate less than the national average  
and it appears to the satisfaction of the Commission in  
the change for Federal assistance be taken into consideration.  
If the reduction is not considered, only one of the four  
newest municipalities were receiving power in 1948 at a  
rate less than the national average, and it is probable  
that of the four the reduction was made for the reason that  
the reduction was made for the reason that the power was  
in the hands of the Federal Government.

whether or not, in view of the additional cost which they would have to pay, they will or will not take power.

complaint was made, by some of the representatives  
who appeared before us, in regard to construction and mainte-  
nance of the road, the road being in a very poor  
state of repair. In the course of the hearing



"....we think that we could take care of the plant very much cheaper than is being done at the present time, and that we would save a good deal of money.

Q - "What is being paid now?

A - "I think last year it was about \$88,000 it cost. Take for instance putting up pole lines. I believe that our superintendent, or his gang, will put up the power lines for possibly 50 or 60 per cent. at least of what the Hydro construct them.

Q - "What makes the difference?

A - "Just because they know how to work at it, and they are interested. We are putting the money up ourselves for these things, and we have control, and we have a good engineer that is right on the job and knows what a day's work is.... He knows how to dig a post hole, and knows how long it should take, and that is the reason we have been making so much money at Owen Sound, because we have a good man there as superintendent."

Mr. Legate's estimate of the saving that might be effected if the work of erecting transmission lines were done under the supervision of local engineers was vigorously disputed by the representatives of the Commission, and we did not go into the matter at sufficient length to justify us in making any findings on the particular questions at issue. In the construction of transmission lines there should always be full and cordial co-operation between the Commission and the several municipal corporations interested. In cases where the Commission finds that the work of constructing transmission lines can be done efficiently and economically by local engineers and their gangs, it would seem to be a wise policy to let them do the work under the direction of the Commission. If this were done the municipi-





palities would have no ground for complaints as to costs, such as were made before us, and it would soon be known whether or not the statements made by Mr. Legate were well founded.

Georgian Bay Power Company

Parties who owned the original power site at Eugenia Falls and who had done a considerable amount of development work there, appeared before us and complained that they had been treated unfairly by the Commission. They stated that their understanding was that the Commission would not submit to arbitration the question as to what the Commission should pay for the property, and that they were, therefore, placed in the position of having to accept the Commission's offer of \$60,000 or making no sale. They further stated that the Commission took the position that if the owners did not take the price offered the Commission would bring power in from the Niagara System and supply this power throughout the district that the Eugenia development would serve. This, they said, would have made their property practically valueless and they accepted the offer rather than lose practically all. They expressed confidence that if there had been an arbitration they would have received a considerably higher price for their property. The Chairman of the Hydro-Electric Power Commission, and members of the staff, in reply stated that they had offered what they believed to be a fair price for the property and that they were not under any conditions prepared to give more.





This sale was closed some seven or eight years ago, and we considered that in any event we were not warranted in going into the differences between the Commission and the vendors. It would have involved a lengthy investigation and the calling of a number of witnesses as to values. We make no findings in the matter. We propose in our general report to outline the policy that in our opinion should be followed by the Commission where it enters fields already occupied by private power undertakings.

#### Cataract Power Company

With respect to the claim for damages advanced by Mr. J. M. Deagle, representing the Cataract Power Company, it may be pointed out that the company has the right to apply for arbitration proceedings in respect of this claim. Mr. Deagle has stated that he has requested a fiat from the Attorney-General to sue the Commission, but that this, while not refused, has not been granted.

#### Georgian Bay Milling & Power Company Limited

Power has been supplied to the Town of Meaford for many years past by the Georgian Bay Milling & Power Company. The electors by their votes, in January, 1922, approved the making of a contract with the Commission. There is no doubt, as stated before us, that the effect of this will be to take away the customers of the Georgian Bay Milling & Power Company and be most ruinous to it. Whether or not local conditions are such as to make it desirable that power should be brought

This will be done in the next few days, and we anticipate that in the event we were not warranted in going into the differences between the Commission and the vendors, it would have involved a lengthy investigation and the holding of a number of witnesses at its trial. We have no findings in the matter. We thought it was better to leave in order the policy was in our hands which would be subject to the Commission where it would have been subject to the policy power authorities.

Statement of Mr. J. M. Dwyer

This report of Mr. J. M. Dwyer, representing the General Power Company, it may be stated that the company has not been able to supply the electricity produced in the power of this plant. Mr. Dwyer has stated that he has requested a list from the Attorney-General to the Commission, but that this, while not refused, has not been granted.

Statement of Mr. J. M. Dwyer

There has been supplied to the Town of Montreal for some time past by the Electric Co. of Montreal a power plant. The electric power, in quantity, is limited, and the power is not sufficient to supply the Commission. There is no doubt, as stated before us, that the extent of this will be to take away the electric power of the Commission and supply a power plant and to use it for the purpose of the Commission. We have no doubt as to the fact that the Commission is not able to supply the power of the Commission.



in from Eugenia, the people of Meaford are best able to judge. If an agreement between the town and the Georgian Bay Milling & Power Company, fair and satisfactory to both parties, can be arranged, it would seem desirable that such an agreement should be made.

From the evidence given before us it appears clear that the proposal that Meaford take Hydro-Electric power came, not from the Commission, but from the people of Meaford themselves and that no pressure was brought to bear by the Commission on the people of Meaford to induce them to take power from it.

In view of all conditions obtaining with respect to this matter, the stand taken by Mr. G. T. Clarkson, trustee for the insolvent company, seems to be fair and reasonable. Mr. Clarkson suggests that the execution of the contract with the town for Hydro-Electric power be delayed, in order that some compromise may possibly be reached, which will be fair to both parties.

In conclusion we desire to draw attention to the fact that the contracts entered into by municipal corporations in the Eugenia System, with the Commission, for a supply of power, were made in accordance with the provisions of Section 18(7) of the Power Commission Act which authorized the Council of a municipal corporation, the electors of which have voted in favor of a supply of electric power from the Commission in accordance with the provisions of the Municipal Act, to "enter into a contract with the Commission in such form as

(11)

in this respect, the people of the city are not to be  
deprived of their right to have a say in the matter.  
It is the duty of the Commission to see that the  
people are not deprived of their right to have a say  
in the matter, and it is the duty of the Commission  
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may be approved by the Lieutenant-Governor in Council without submitting a by-law approving the same for the assent of the electors as provided by subsection (5)." Subsection (5) requires approval of a provisional contract and a by-law, and that "the estimates of the Commission or a summary thereof and a copy of the provisional contract shall be published with or form part of the by-law." Procedure under subsection (7) obviates the necessity of informing the electors generally of the estimated cost of power it is proposed to supply to their municipalities, as there would be if proceedings were taken under preceding subsections of Section 18.

We consider it advisable before any vote of the electors is taken that the estimates or a summary thereof be published.

All of which is respectfully submitted.

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